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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,438	05/30/2002	Takahiro Nakajima	11197/7	3695

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EXAMINER	
LEE, RIP A	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,438	NAKAJIMA ET AL.	
	Examiner	Art Unit	
	Rip A. Lee	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-7,9,10,14-16,19-21,30,31,33,35,36 and 38-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-7, 9, 10, 14-16, 19-21, 30, 31, 33, 35, 36, and 38-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02-08-2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action follows a request for continued examination (RCE) under 37 § C.F.R. 1.114, filed on April 7, 2005. Applicants have amended claims 1, 4-7, 10, 14-16, 21, 37, and 38. Claims 12, 32, and 34 were canceled. Claims 1, 4-7, 9, 10, 14-16, 19-21, 30, 31, 33, 35, 36, and 38-41 are pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 4-6, 9, 10, 19, 30, 31, and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson *et al.* (U.S. 3,847,873) for the reasons set forth in previous office actions.

The Jackson *et al.* patent teaches a process for preparing aromatic polyesters in the presence of a catalyst composition comprising a phosphorus compound of formula $X^1X^2(X^3O)P=O$ wherein at leason one R group attached to Z is biphenyl (col. 3, line 48). The compounds ethyl *bis*(*p*-biphenyl)phosphinate and poly(diethyl *p*-vinylphenylphosphonate) are exemplary (see Table, entries 3 and 5). The second component of the catalyst is a metallic component which contains aluminum (col. 3, line 56; see also claims 7 and 8). The compound $Al(acac)_3$, where acac is acetylacetonate, is exemplary (Table, entry 6). It can be seen that the phosphorus compound has an aromatic ring structure and the aluminum compound is an aluminum chelate. Although the reference does not show a catalyst containing *bis*(*p*-biphenyl)phosphinate and $Al(acac)_3$ or poly(diethyl *p*-vinylphenylphosphonate) and $Al(acac)_3$, it is deemed that one of ordinary skill in the art would have found it obvious to arrive at such a catalyst because each of these components is disclosed clearly in the Table. One of ordinary skill in the art would have reasonably expected such an obvious combination to produce an effective catalyst for preparing aromatic polyesters.

3. Claims 7, 14, 15, 16, 20, 21, 33, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson *et al.* in view of Aoyama *et al.* (CA 2,253,515).

Aoyama *et al.* teaches that polyester formation in the presence of aluminum catalysts is accompanied with foreign matter (side products) that tends to degrade the color tone of the resulting polyester. Furthermore, filtration is problematic as a result of the foreign matter (pages 9 and 11). Consequently, the inventors prescribe use of an alkali metal compound to inhibit the formation of foreign matter to alleviate such problems (page 9). Although Jackson *et al.* does not disclose use of these group I/II metal compounds, one of ordinary skill in the art would have found it obvious to combine the teachings of Aoyama *et al.* in the process of Jackson *et al.* because the latter also uses aluminum catalysts to produce polyester. The skilled artisan would have expected the production of foreign matter and would be motivated to inhibit its formation in order to achieve a better product.

4. Claims 1, 4-7, 9, 10, 14-16, 19-21, and 30, 31, 33, 35, 36, and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over to Ridland *et al.* (WO 99/28033) for the same reasons set forth in previous office actions.

Ridland *et al.* teaches a catalyst prepared an orthoester of aluminum, a diol, an organophosphorus compound containing at least one P-OH group, and a base (claim 1). An example of the aluminum orthoester is (*sec*-BuO)$_3$Al, and the base is NaOH (see Example 12). The resulting organometallic species is used as a polymerization catalyst for making polyester. The organophosphorus compound is selected from phosphates, phosphonates, and phosphinates (page 3, line 20). The reference does not teach specifically use of phosphinate compounds and phosphonate compounds which contain aromatic ring structures, but in view of the fact that use of aryl ring containing phosphorus compounds such as aryl phosphates is also contemplated (page 3, line 23), it is maintained that one having ordinary skill in the art would have found it obvious to use aryl phosphinates and aryl phosphinates. The skilled artisan would have found it obvious to arrive at such an embodiment since it flows naturally from the teachings of the patent, and he would have expected such a catalyst to perform equally well in producing polyester.

5. Claims 7, 14, 15, 16, 20, 21, 33, 35, and 36 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Ridland *et al.* in view of Aoyama *et al.*

Aoyama *et al.* teaches that polyester formation in the presence of aluminum catalysts is accompanied with foreign matter (side products) that tends to degrade the color tone of the resulting polyester. Furthermore, filtration is problematic as a result of the foreign matter (pages 9 and 11). Consequently, the inventors prescribe use of an alkali metal compound to inhibit the formation of foreign matter to alleviate such problems (page 9). Although Ridland *et al.* does not disclose use of these group I/II metal compounds, one of ordinary skill in the art would have found it obvious to combine the teachings of Aoyama *et al.* in the process of Jackson *et al.* because the latter also uses aluminum catalysts to produce polyester. The skilled artisan would have expected the production of foreign matter and would be motivated to inhibit its formation in order to achieve a better product.

Response to Arguments

6. The provisional obviousness-type double patenting rejections set forth in the previous office action remain in force. Applicants have indicated that terminal disclaimers would be submitted when allowable claims are found.

7. Applicant's arguments filed February 28, 2005 have been considered fully, but they are not persuasive. Regarding U.S. Patent No. 3,847,873 (Jackson *et al.*), the purported correlation between phosphorus retention and polymerization times is empirical, and it does not appear to suggest to the skilled artisan a predictive measure of catalytic acitivity. While Applicants discussion of Y values has some merit, it is not germane to the case since the comparison is made between catalysts containing non-aromatic phosphorus compounds. Also, Applicants attempt to correlate viscosity and polymerization activity is erroneous. The claimed combination remains obvious over the teachings of the prior art. There is no recitaiton in claim 1 of the patent which would discourage one of ordinary skill in the art from using the claimed combination of compounds.

Regarding WO 99/28033 (Ridland *et al.*), it is maintained that one of ordinary skill in the art would have found it obvious to arrive at the subject matter of the present claims. It is true that Ridland *et al.* does not exemplify the claimed invention, however, it must be appreciated that the rejection of record is based on obviousness rather than anticipation. In this connection, Applicants have not provided cogent reasons to support a case of non-obviousness. In light of this and previous discussions, the rejections of record have not been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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May 16, 2005